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ABSTRACT

The definitions and usages of the concept of competence are reviewed, and, using two different studies as illustrations, two kinds of contextual factors that are crucial to any attempt to describe, analyze, or assess children's competence in school are discussed. The two kinds of contextual factors are situational factors and task-specific variables. (DB)

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Reassessing the Criteria of Competence in School*

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There is something very attractive about the concept of competence, perhaps partly because it offers ways of thinking about positive and effective aspects of human behavior. But there is a danger of its becoming an omnibus concept, and thus losing its power to communicate. Before turning to what competence means in school, therefore--to how we can think about and try to assess it--I would like to set some limits on what the concept of competence embraces.

Competence has both a technical and a lay meaning; these are often used interchangeably, and they do overlap. Most investigators follow White's (1959) lead in applying the concept of competence to the individual's actions upon the environment, actions which produce or lead to an effect of some sort. Thus, Charles Wenar looks at "executive competence": the toddler's transactions with his physical environment (locomotor, manipulative, visually regarding), his initiation of action, the ability to sustain it; the complexity and intensity of his involvement; his self-reliance. And Carol Eckerman points to the infant's and toddler's exploration of people as well as of things, his growing competence in using things to initiate and sustain interaction with people. In these (and other) studies, then, competence is taken to involve action; which is to say, overt, observable behavior. The competence <u>is</u> the action.

It is to be distinguished from non-observable behavior, like contemplation, which, by nature internal, is not included in the concept of competence. Only its behavioral consequences, if any, can be assessed in terms of competence.

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Perhaps the most common way in which competence is used these days--at least in developmental psychology--is to distinguish it from performance. Competence by this meaning equals capacity; it refers to the underlying capability which may or may not be manifested in the individual's performance or action. We have to thank the linguists for highlighting the significance of the discrepancies between competence and performance, for reminding us that performance is a sign of but not a synonym for competence.

But don't we have a dilemma, a contradiction, here? On the one hand, competence is said to constitute action upon the environment, or at least interaction with it; on the other hand, actions are singled out as imperfect indicators of the competences they derive from.

There is another meaning of the term competence that I think deserves mention: competence as adequate and sufficient, but not great performance. The distinction here is between competence and talent. If we call a painter a competent painter, the term suddenly becomes derogatory. Instead of praise, this is a put-down, because it describes his skill by delimiting it. It means that the painter has merely mastered the medium.

When a child is said to be competent in school the implication often is that he is better than merely adequate: a competent reader is not just a child who can read, but someone who is good at it; a child who is competent in math is not only able to manipulate the number system, but to do it well.

As soon as we think about competence in school, we have to think about a special set of competences--those defined by and considered appropriate to the school setting. Which means that they are culturally defined. Of course, social and cultural variables influence early competence, too. Early locomotion depends not only on the child's developing physical control but on environmental conditions; development of fine motor control is facilitated by opportunity for

"contingent learning"; the use of language is influenced by the ways adults respond to vocalization and early verbalization. But to a considerable extent, these competences are emergent. As the child matures, he will, unless impeded, inevitably crawl, creep and walk. He will achieve increasing facility in coordinating his movements; and he will talk in the language the family uses. The timing and form of his competence in school, on the other hand, are almost entirely mandated by the culture.

Schools mandate not only what the child should learn, but also how, in what sequence and at what time he should learn it; and the curriculum and the Daily Lesson Plan are only a portion of what he learns in school. He also has to learn how to get along in the school world. That includes learning when to sit and when to stand; when to be quiet, when it's safe to whisper; how to fake attention; and how to take tests. He learns to wait, to ignore distraction, to be alone in a group. Much of his competence depends on how well he can negotiate the school culture. Some of the things he learns may turn out to be useful in other situations; many are institution-specific. Some are strictly cognitive, others strictly social, calling for special kinds of personal and interpersonal competences. In the school setting, cognitive competence is inextricably bound up with social competence. In different kinds of schools, there are different mixes, but a mix is inevitable. I do not mean merely that since schools are social institutions, interpersonal competences are necessary for survival, but that being judged competent in school requires as much social competence as cognitive.

Another sense in which the concept of competence needs to be bent in order to be applied in the school setting, is that a good deal of competent school behavior requires restraint from action: not running, not talking, not getting out of one's seat, not drumming on the desk, that is, withholding action to avoid an effect. This is the converse of action-on-the-environment, for the child's goal

is to produce as little effect as possible (to keep a "low profile").

If we try to pull these ideas together to talk about competence in school, we face head-on a basic problem in psychology--the interplay of psychological processes and contextual factors. It is certainly not new, rather, it has "long been a kind of shadow issue in psychology," to use Cole and Bruner's (1971) phrase.

It seems likely that in the behavior of the very young child there is a greater correspondence of performance and competence. Action is the young child's medium. The inhibition of action, or the simulation or distortion of his response requires considerable developmental maturity. His performance, therefore, which is what he does, is a pretty good indicator of what he can do. Leaving aside the effects of high tension--hunger, fatigue, fright--the situations in which performance and competence are discrepant in the young child are fewer in number and relatively easily recognized: mother absent vs. mother present, unfamiliar vs. familiar, and so on.

When we are dealing with the older child in school, contextual factors become increasingly complex. There are two classes of variables that have to be taken into account: first, social-situational variables and second, task-related variables. Again, neither of these is new. But we have to do more than mention them in passing. We have to find ways of studying them specifically, and of incorporating them into the fabric of research. I want to talk about these two kinds of contextual variables using two studies to illustrate the problems.

The Importance of Situational Factors

Usually what is assessed is not so much the competence of the individual child, but the differences between children who have been involved in different kinds of educational programs. This is usually done by giving tests designed to measure the behavioral outcomes of the program(s). Studies vary, of course, in

the precision, imaginativeness and range of measures used. But it is safe to say that, in general, the assessment of the impact of educational programs has not shown the expected differences in performance on conventional outcome measures.

I speak as one who has recently been burned. I conducted a pilot study of the effects of participation in a Bank Street sponsored Follow Through (FT) Program.* The subjects were first grade children in each of three FT schools and three comparison schools which were not involved in FT or any other enrichment program. (The N was 150 children, all poor and black.) We observed the children in their classrooms; and in each of the three pairs of classrooms the variety of the curriculum and activities, the general atmosphere, the quality of relationships between teacher and children and among the children were strikingly different. The FT rooms were characterized as lively, vibrant, with a diversity of curricular projects and children's products, and an atmosphere of friendly, cooperative endeavor. The non-FT rooms were described as rather uneventful, poorly equipped, with a narrow range of curriculum, uniform activity, and a great deal of "seat work"; both teachers and children were quieter and more concerned with maintaining or submitting to discipline. The programs and teaching methods of the non-FT classrooms exemplified a traditional educational ideology, with its emphasis on the prerogatives of adult authority and conventional standards of achievement.

The teachers in the FT classrooms were themselves learning new ways of teaching and interacting with children. The Bank Street program has a comprehensive approach with multiple goals for both children and teachers. Teachers are expected to embrace new ways of teaching, which go beyond the mere introduction of

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*This study was supported by the Follow Through Branch of the U.S. Office of Education.

specific instructional materials or methods.* It is not a way of teaching that one learns in a few weeks. Still, the FT teachers were offering the children opportunities to explore and experiment, to express ideas and raise questions, to act autonomously, and to work cooperatively. They took a much broader view of competence than did the teachers in the comparison classrooms.

Given these dramatic differences in the classrooms, it was something of a shock to find that there were no significant differences in the children's performance in individual test sessions.

Of course it matters a good deal exactly what tests were given, what measures derived, what were the conditions of testing, and what kinds of rapport were established. I have described these in detail elsewhere (Shapiro, 1971). Briefly, the tests used were not aimed at assessing factual information, nor personality functioning, but attempted to probe attitudes and expressions of feeling about the self, about school, about learning; they were measures of divergent rather than convergent thinking, tapping the disposition to respond rather than the response per se. Although I tried for diversity in task requirements, much of the data depended on the child's verbal responses. (This, of course, is not unusual in studies of this sort.)

We all know that psychology is built on significant differences, not on negative findings. We cannot explain but can only speculate about equivocal findings. Nevertheless, the striking discrepancy between the two sets of evidence--the observational data and the test data--suggests, demands, that we take another look at the rationale of studies of this kind.

It is important to note that the children were responsive. Some talked more

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*We have tried to spell out the basic assumptions of this approach elsewhere and have described it as a developmental-interaction approach to the education of young children (see Shapiro and Biber, 1972).

than others, but no one was resistant. Both the comparison and the FT children were able to respond adequately to the questions and tasks. They were polite, docile six-to-seven year olds, newly inducted into the culture of the school, prepared to talk to the testers who were friendly but nevertheless outsiders. We asked them about school. They like it. What do you do in school? "In school we": work. "My teacher": is nice. In a strange and artificial situation with no clear guidelines about what was expected, they responded like well-socialized children with superficial, often cliché responses. They conformed so well that the uniformity of their responses was overwhelming.

If we examine the role of classroom data and test data and the relations between them, we find an unnatural emphasis has conventionally been placed on the test data. Psychologists have tended to dismiss the validity of the child's behavior in the classroom because it is contaminated by situational variables. We have generally acted as if the standard test situation were free of social variables. On the contrary, the fact that a situation is pared down and restricted does not remove it from the social domain; rather it defines the types of situational constraints that are operating. This infatuation with standard testing has led us to forget that the findings can only be generalized to an extremely narrow range of social situations. The traditional classroom is actually a situation which is very similar to the testing situation. Here too the subject child is politely coerced into attendance; the adult asks, the child responds. But when classroom practices are more open, when teachers respond to children more informally, when they encourage questioning and experimentation, when they offer more heterogeneous experiences, the scope of appropriate behavior is broadened. Children learn that there may be more than one answer to a question, that they can initiate, and terminate, activities. Then classroom and testing situation have fewer common aspects.

We don't have the time, nor is this the appropriate forum, for an extended critique of standard testing; I, as well as a number of others, have discussed some of the issues more fully elsewhere (see Shapiro, 1973).

What is relevant to our consideration here is, I think, the narrow band of behaviors being sampled in a severely restricted situation. We look at performance measures as indices of competence; yet in the test situation what we often get is how competent the child is in coping with a strange adult and a strange situation. This may be especially true when we are testing children of minority backgrounds, as in the study I've described. And although the testers were also black in this study, they clearly came from another world. These considerations are important because the assessment of children's performance in test situations is almost invariably taken as evidence of their competence or lack of competence, in general terms.

Dell Hymes' (1971) concept of communicative competence is, I think, extremely useful: briefly, communicative competence requires the ability to switch between parts of one's verbal repertoire, to be fluent and facile in many domains. Cognitive competence also requires effective functioning in different domains, the ability to respond to the requirements of different situations, flexibility in dealing with different kinds of content, and in different modalities. We have to differentiate the concept of competence in school, in terms of cognitive domains as well as developmental appropriateness; then perhaps we can devise differentiated indices and methods of assessment.

The Importance of Task-Specific Variables

I wish to illustrate the importance of task-specific variables, the importance of the task medium, by briefly describing another study which concerns children's abilities to recognize and reproduce simple two-dimensional geometric

forms.* I began with the idea of investigating discrepancies between perception and performance. Now it seems clearer that the study is of consistencies and discrepancies among different kinds of performance, and among performance with different materials or in different media. A task requiring visual recognition of different geometric forms was expected to give baseline data. A chart with 13 geometric forms is shown. We show the child a small card with one of these forms on it and ask him to find the one on the chart that is just like it. The children, aged four through nine, make very few errors; as is expected, the younger children make more errors.** The errors make sense: the plus and the "x" are confused, as are the triangle and the upside-down triangle. The major source of error (that is, 52% of all errors) is the confusion of two figures: a square with a diagonal going from upper left to lower right, and a square with a diagonal going from upper right to lower left.***

But now, when we ask the children to copy a square with a diagonal, many of those who were confused in the recognition task can make adequate copies: only six children reverse the direction of the diagonal in their drawings. Later, we ask them to construct a square with a diagonal out of rods; and later still, we construct a diagonal made of checkers on a checkerboard and ask them to copy it. It does not necessarily follow that the child who confuses the direction of the diagonal in the (baseline) recognition task cannot make an accurate construction

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*This study has been supported by a grant from the National Institute of Mental Health, grant #MH 21808. Since data are presently being analyzed, I speak about findings with considerable tentativeness.

**Four year olds make 3-4 errors (range: 6-13 correct, M = 9.6). Five year olds make 2-3 errors (range: 8-13 correct, M = 11.4). Eight and nine year olds make practically no errors (range: 10-13, M = 12.4, 12.3, respectively).

***The proportion of errors made on the diagonal, as expected, increases with age: 4 year olds = 30%; 5 = 53%; 6 = 50%; 7 = 90%; 8 = 77%; 9 = 87%.

or copy in the later two tasks. Nor is inadequate performance on any one task necessarily associated with inadequate performance on another.

The point I want to make is simple: there are realms of "performatory activity." Each has rules to be learned and techniques to be mastered. The child has to be able to cope with multiple rules simultaneously and to know which rule to apply when.

Performance, says Jacqueline Goodnow (1972), entails selection from a repertoire of behaviors. A competent performance requires the selection and adequate execution of the appropriate behavior or action. It involves narrowing the range of possible behaviors to match what is appropriate: applying the correct selection rule. Of course, the individual has to have the relevant behavior(s) in his repertoire.

When a child does not understand a given concept, successful performance on any task and in any medium relating to that concept is unlikely. When a child has a firm understanding of the concept, he can represent it in a wide range of media. The understanding is not specific, but general. When the child is in a stage of transition between no understanding and full understanding, his performance is more likely to be medium-specific and he may perform adequately in one medium and poorly in another. His transitional stage position makes him more susceptible to the influence of contextual factors.* Perhaps some of the confusing and equivocal findings in psychological and educational research can be attributed to poor timing--the fact that we are assessing children's proficiencies

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*Flavell and Wohlwill (1969), in their analysis of the determinants of performance in cognitive tasks, also point to "the instability, inconsistency and lack of generality of concepts during the period of their formation" (p. 110). They consider task attributes as presumably responsible for the horizontal <u>décalages</u> in Piagetian (and other) research on cognitive development. But décalage seems a misleading term; it literally means un-wedging, suggesting the separation of what was once unified.

just at the time that they are most susceptible to contextual variables.

I have reviewed some of the definitions and usages of the concept of competence; it is somewhat chameleon-like: its meaning changes depending on the context in which it is applied. I have tried, using two different studies, to illustrate two kinds of contextual factors which, in my view, are crucial to any attempt to describe, analyze or assess children's competence in school. Clearly we need a much more sophisticated research strategy than any that has yet been used if we are to clarify and differentiate the criteria of competence in school.

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